



1

Appn. #: 10/050,193 Reply to Non-Compliant Amendment of 11/8/04, Office action of **Election/Restriction** of 8/8/05 and Notice of Non-Compliant Amendment of 37 CFR 1.121 mailed 11/14/05

Appn. Number: 10/050,193

Appn. Filed: 1/16/02

Current DATE: 1/18/06

Applicant: Sonny L Chambers

Title: audio-cell

Examiner: Justin Michalski

Amendment -C

Assistant Commissioner for Patents

Washington DC 20231

In response to the Notice of Non-Compliant Amendment of 11/8/04 and the Office action of Election/Restriction of 8/8/05, please amend the above application as follow

Amendment:

Amendment to Specification begins on page 2 of this document.

Amendment to the Claims begins on page 104 of this document.

Amendment to the drawings begin on page 115 of this document

Amendment to Remarks begins on page 116 of this document.

reply to Office action of Election/Restriction of 8/8/05 AND Non-Compliant Amendment of 11/8/04 AND 11/14/05

Appn. Number: 10/050,193

Appn. Filed 01/16/2002

Reply to Non-Compliant Amendment of 11/8/04 and
Office action of 8/8/05

Amendments to the Specification:

Please replace the following specification from page [1 to 13] with the following amended specification page:

Background-field of invention

[1-13] This invention (relate) relates to ~~crossover networks~~ (.) variable or invariable audio enhancing circuits of communication, such as an audio circuit that is provided for enhancing audio signals that derive from an acoustic source of communication, more specifically, an audio circuit for enhancing the acoustic quality of communication systems. The invention further reflects on means for conveying audio signals of communication, such as multiplexing means, analog acoustic transmission and apparatus, digital acoustic transmission and apparatus and coupling methods of communication. The audio enhancing circuit, as described, refers to audio enhancing circuits, such as audio processing circuits and other audio enhancing circuits for providing acoustic enhancement communication procedure of a communication system. audio ports, electronic coupling medium and electronic (acoustic hearing aids,) for enhancing a communicating audio- (section.)

Background--Description of Prior Art

Wireless Radio communication are is an exiting new concept, but this phenomenon can also be bring forth harmful communicating communicational conditions devises. In refers to the remote mobility that these wireless communication devises provides, Telecommunication apparatus it may be reasonable to state, under mobile conditions, that wireless telephones are used any where anywhere from a personal habitant commercial and residential areas to automobiles.

reply to Office action of Election/Restriction of 8/8/05 AND Non- Compliant Amendment of 11/8/04 AND 11/14/05

Today Due to the hazardous conditions that wireless telephones influents when employed under mobile conditions that an automobile provide, they there are many laws passed throughout the country U.S banding banning these wireless telephones telecommunication devises from motor vehicles, such as US U.S public law 100-394 August 16, 1988, which requires requiring hand held handheld communication devices, such as wireless telephones to be coupled with an external hearing aid because of (it's) its potential hazard to ~~motorist~~ motorists and pedestrians.

Despite the danger(.), The wireless telephones or handheld telecommunication apparatus have evolve evolved to become a main source of communication. However(;), in order to bypass some of the occupying distractions and hazard hazardous conditions of communicating while during the critical durations that requires vital concentration while operating a motor vehicle or mechanical means which apparently require sufficient concentration for safe procedure, performing a physical task (.) magnetic coupling hearing aid aids are adopted to a communicating communicative section in a wireless telephone to aid in to facilitate the telephone system by enabling a fluent non-divertive communication procedure in the present of mobile operation, communicating in an un occupying manner (.)

A prior invention relating relative to a magnetic hearing aid which accordingly couples with a communication system for hearing to aid in the conveyance of audio signals during communication procedures is provided in US U.S Patent number 5740257 by Marcus; Larry Allen April 14, 1918, which describes a magnetic coupling hearing aid with active noise control for eliminating noise by generating a representation of the original input signal. (.) Thereby, the acoustic generation is employed to drive an individual external earphone (.) field coil. The external field coil is positioned between the handset receiver and the handset audio output ports position for easy access or convenient operation to a user. A receiving apparatus is disposed into the ear cavity for signal response and to drive a magnetic field(,) comprising an interior cavity and (a) an audio output port for inputting signals to (a) an ear cavity(,) having a receiver in said interior for receiving (a) an audio signal and transducer for communicating with said ear cavity.

These The plugged-in magnetic hearing aids aid devices device that is provided in the prior application(,) are some time is tailored manufactured with for facilitating wireless handheld telephones telecommunication devises , and they are compatible with most it includes accessories to accommodate the wireless telephone devices telecommunication deviees . Though the employment of the magnetic hearing aid of a communication device may be subjective to pedestrians and may relate to motorist , objectively , the method that the present application provides is critical to the facilitation of operating a motor vehicle during the procedure of communication . Therefore , under the terms and conditions that the prior application provides , apparently , this prior art is incapable of possessing the crucial mobile properties , as the preset application , because of the distinctive immobile nature it possesses , which appears to be relegated with secondary-ratings of mobility , in comparison to the mobile coupling method of the present application . In account to the objections of the prior articles of this nature , Magnetic field magnetic hearing aid aid or headsets are used on in a wireless telephonic communication device to bypass the occupancy of an the wireless hand held telephone devices telecommunication device . However , But (.) a user is still occupied with an annoying a defective headset headphone device(,) plus a handheld wireless telecommunication telephone device while communicating(,) when using when a magnetic coupling hearing aid with is connected to a wireless communicating telephone device for executing mobile operations during the communication procedure .

Unlike In consideration of the present article “Audio-Cell” which facilitates remote communication , wherein herein , a coupling method execute executes a reserve touch-free hands-off remote way of communicating audio signals to a user in motor vehicles or machinery of mobility . According to the nature of this method which is provided in the present application ; substantially , the technical arrangements is applied to enable the user’s focus to be centered on the operation of the machine or vehicle instead of the divertive consistence that is objected in the presents of mobile communication and may direct focus only on the conversation while the conductivity of communication is in motion with the operation of the machine or motor vehicle .

Magnetic coupling hearing aid aids bring (on) increase of body temperature while your body (is active) they also cause friction divert attention and can may cause hazardous conditions; affect a users hearing therefore, this becomes a great negative drawback for the magnetic coupling hearing aid devices.

Technically, the present application is fundamentally designated for the emphasis of quality acoustic communication. The acoustic reproductive elements that are employed for the implementation of perceivable acoustic messages are vital to the object of acoustic communication. However, by any means, most Most prior art in this the narrow field of extensive acoustical communication (do) does not emphasize the fundamental or elements of acoustic section quality of (a) of telephones, duplex or designated simplex communication systems apparatus enough. Relative articles that does emphasize the acoustic section of a telephonic, duplex or designated simplex communication system Audio related article are not that concern concerned with sound efficieney audio quality, efficient performance or general acoustic improvements for at least a reasonable perception during the procedures of communication. but there However, their attention is directed in other extraneous areas, such as recording, networking, generating acoustic signals to interconnect with warning devices, such as, telephone or computer ring tone devices, domestic acoustic interactions which may include selective acoustic interaction, such as access dialing and voice activated access.

An example of a relative article of this extraneous nature of acoustic communication is patent number 4,214,131, in which reflects on the ring tone devices of a communication system. From that aspect, the application recites an audio signal device that is substituted or compensate by integration for the usual electromechanical ringer device of a telephone system. The audio signals device further includes solid-state circuitry for eliminating noise pulses and an electronic oscillator circuit that will operate effectively on a minimum current supply and variable volume control.

In consideration of the extraneous acoustic nature of the prior art application number 4,214,131, it is apparently distinguished from the present application. From that aspect, the provided audio signals device of the prior art application number 4,214,131 is basically interpret as a piezoelectric acoustic generator device that is employed as tone ringer device. Accordingly, this prior art is distinguished from the present invention in which audio enhancing or processing circuits are employed to provide quality audio signals, which consist of conversation or audio communicational massages that are communicated as words or other form of acoustic massages that are not specifically a ring-tone warning but are quality acoustic communication with the ability of magnificent perception, due to the enhanced acoustic quality value thereof. Therefore, these extraneous traditional applications extract the main object of an acoustic communication system. Practically, the fundamental object of communicating over telephone systems or other communication systems is to ensure that conversations can at least be perceived sufficiently without great amount of difficulties. Unfortunately, the fixed rate of poor acoustic quality content of the traditional communication systems or interconnecting prior art of this nature, basically, consists of consecutive components of acoustic deficiencies that possess inadequate intelligibility in these communication applications. However, in account to these relevant objectives, the obsolete acoustic status of the traditional communication system demands modifications. Nevertheless, they have not supplied these demands, under the consideration that good acoustic quality is definitely critical to the definition of good acoustic perception, as for as communication is concern. Therefore, the object of quality acoustic communication may compellingly be addressed only in the specific fields of transmitting and/or receiving provided reasonable acoustic quality communication to and from external existence like a subscriber(,) user or other communicative devices.

Another related prior art article (to) specified in the field of audio sound communication is patent number 6,760,323

by Strandberg, filed on July 6, 2004, which recites a system and method that are employed for providing audio communication signals over a communication system, such as a computer network which is interleaved between transmitter and receiver devices using differing communication formats. The system identifies the format of the incoming digital encoded audio data signal, identifies the destination device format of the signal, and converts the data to a second digital encoded audio data signal which is compatible with the format utilized by the destination device. From that aspect, other related prior articles are patent number 5610910 by Focsaneanu et al, filed Mar. 1997, patent number 5768350 filed jun 1998 by Venkatakrishnan, patent number 6134235, 5867494 and 5892764.

According to the presentation of the prior art patent number 6,760,323, the provided system that recognize the destination device format and converts the data to audio data signal which is compatible with the format utilized by the destination device is basically construed as a system that is employed to convert the transmitter's signals to compatible audio signals for consistent reception. Under the provided terms and conditions, this prior art and the other articles of this nature are distinctive from the present application. A number of reason is because, in the present application, variable or invariable audio enhancing circuits are provided to a communication system for enhancing and varying the audio signals of the communication system thereto enhanced acoustic quality value and for arranging the transmission medium for the conveyance of the enhanced audio signals. In this manner, high quality audio signals are provided to a communication system and are able to be communicated over a very narrow medium to improve transmission and acoustical perception of communication herein.

Other prior articles the invention contemplate basically recite audio devices, such as filter networks comprising communication systems. From that aspect, these prior articles employs the use of variable frequency dividers filter circuits for filtering separating the audio frequency signals, of a clock pulses so that they are able to be annualized by (a) programmed input analyzer inputs devices that are responsive to audio tones and active signals from a keyboard within a predetermine frequency from an acoustic source of the communication apparatus. A musical instrument comprising a code generator that's responsive to a operating (key) for generating a code indicating (tone pitch) and another code indicating a (active operated key.) (A) second frequency could be preset (and) divide (to a) (another count value.) These frequency dividers audio devices are basically used in this these prior articles article to detect a pitch or tone that function functions from a keypad or an acoustic source and eject a band of (unwanted) frequency of the communication apparatus, so that the communication apparatus is able to coherently interact by reasoning with the key tone or acoustic source. Therefore, in In this these prior articles article sound is produce from said (keypad and not) from a verbal audio signals are predetermined by the acoustic devices for reasoning with the communication apparatus but not for enhancing or processing audio signals in which "telephone quality" audio signals are enhanced to higher quality audio signals within the communication system, as in term of the present application, which is tailored for providing and explicitly broadcasting the enhanced acoustic signals of communication. Moreover, with the present application, variable articulate-emphasis enabling audio communication to be superbly reinforced by specified variations before and during communication. The technicalities that is provided by the prior art is exclusively designated for logical interactions with the communication apparatus but contrastingly differs from the present application. One reason is because it does not at least contain remote acoustic enhancement of the communication system. Hence, the definition of the present acoustic communication application becomes more definite of acoustic enhancement. With the present application, audio signals are extremely processed for perceivable acoustic quality and technical acoustic variation, in which enable accurate communication with precise intelligibility. Therefore, the explicit emphasis of the audio signals are thereby driven to specified regions for executing high quality and efficient communication.

Although ~~multi feature options on multiple extraneous features of (a) wireless telecommunicating apparatus telephones or communication systems~~ are nice to have, such as(,) Wireless Web(,) and Voice Activated-Dialing(.) ~~The ,the main key factors for at least reasonable perception of verbal communication, such as(,) the vital technical elements which implements~~ sound quality that's ~~that is~~ produced from (a) ~~modem the audio section of a telephone, Two-way radio or other communication devices are~~ is often overlooked ~~or excluded in these applications, and there the advantages of these telephones or communication systems~~ advantages usually rely ~~or base~~ on ~~there capacity to hold a plurality of interaction of characteristic displays logical acoustic selective means, tone generating devices for a ringer, etc. However, But these different function features~~ does not give a user (a) ~~clear perception of communication audio signal while communicating .~~

Unlike The provided the fundamental elements of acoustic quality, which is vital to verbal communication systems, is submitted in the present invention "Audio-Cell" wherein Herein, audio signals are carefully divided emphasized thereby into levels of individual improving acoustic qualities (,) band of frequencies and explicitly processing clear audio signals various definite acoustical values for a magnificent communication procedure which, define an ultimate communication system.

Further objects and advantages are to provide at least one ultimate acoustical communication method and to a communicated signal (.) To to provide (a) unique improved communicational coupling method methods herein. Audio signals are carefully emphasized to bring (a) clear band of the signals to a refined state in a communication apparatus. A person can communicate using a wireless or handheld communication apparatus more remotely(,) with little to no hazardous or harmful results.

Magnetic hearing aid aids (,) or headsets (,) coupled to a communication apparatus occupies a users hearing capacity therefore put puts a person at risk to any potential operating operational hazard.

A Two major advantage of the present application invention ("Audio-Cell") is (,) (it's) its convenient no touch remote communicating communicative featur features (,) in which With the remote feature hereof, mobile verbal communication can be executed with more harmonic focus remotely. A number of other object and advantage of this present application is the lineal transmission, ultimate exotic multiplex-technique and technical acoustical emphasis, which has an outstanding impact on the application and includes a degree of variables, which is adopted for decisive acoustic evaluations. Thereby, these special characteristics that are provided in this present article explicitly stresses high class of acoustic quality that are variably predetermine by specified values, or a user.

- a) One can control This present phenomenon enables alternative variations of high quality communication signals in a wireless communication devise device from (a) to be distributed to an distinct extraneous audio system.
- b) The present article (To) give incorporates a variation of variable quality acoustic elements which technically submits a crystal clear quality to communication and enabling enables a user to receive and transmit communication to his or her selected preference.
- c) The present article (To) (give) gives motorists motorists and civilians pedestrians an option to operate a communication apparatus safely without breaking the law and govern while varying variable communication signals communication to there to their these designated values meanwhile communicating, or prior to a cycle of communication.

Drawing Figures

In the drawings, closely related figures have the same numbers but different alphabetic suffixes.

Fig. 1 (Show) briefly demonstrates a signal flow chart illustrating a simplex-mode audio enhancement procedure that includes the illustration of original audio signals and three divided band bands of enhanced audio signals flowing throughout (a) an entire audio enhancing circuit connected to a communication system which thereby form a simplex mode audio enhancement communication system.

Fig. 2 (show) show a perf board an electronic circuit board without any components.

Fig. 3A to 3J 3F (show) provides brief illustrations that consist of (a) Schematic diagram schematic diagrams of constituent audio enhancing circuits such as band-pass filter circuits (a) input output point(,) and illustrates demonstrates connections connection procedures to form an audio enhancing circuit and to connect from the formed audio enhancing circuit.

Fig. 4A to 4G 4H (show) briefly shows (a) basic schematic diagram diagrams of tunable means, switches control means and illustrate illustrates connections to audio enhancing circuits.

Fig. 4D briefly illustrates a battery connection procedure to an audio enhancing circuit such as a crossover network circuit.

Fig. 5A to 5H ~~show~~ shows pictorial and schematic diagrams of an integrated coupling medium ~~and~~ and illustrates connections.

Fig. 6A ~~show~~ shows (a) basic schematic diagrams of an amplifying audio enhancing circuit connections, which include a 3-way crossover circuit, a preamplifier circuit, and a section (.) three three-channel divided input (channels,) and a method of connection procedure.

Fig. 6B , Fig. 6E, Fig. 6F and Fig 6G ~~show~~ shows schematic diagrams of the a ~~show~~ receiving output section of a receiver and illustrates preconditioned output connection procedure connections to (a) of external audio port or external audio section to an independent audio reproductive system for the presentation of an external dispensable voluntary communication-coupling procedure.

Fig. 6C briefly illustrates illustrated connections from a receiving receiver circuit seetion to (a) displaying means.

Fig. 6D briefly illustrates basic connections channel connection procedure that may apply for the employment of an audio enhancing circuit, such as a 3-way crossover circuit to with a receiving input section audio enhancing circuit, such as a preamplifier circuit and channel connections to communication device, such as a transmitter device, a transmitting hybrid network device and a receiver device input section (,) and amplifier's output terminals.

Fig. 7A to 7F show demonstrates an external voluntary dispensable coupling method which illustrates pictorial diagrams of exterior connections(,) from a communication device to a distinct reproducing a motor vehicle's extraneous reproductive audio system(.) located in (a) motor vehicle(.)

Fig. 8 show briefly illustrates a basic schematic ruff rough draft diagram of an entire constituted a simplex mode audio enhancement communication procedure which employs one or more audio enhancing circuit connected to a communication system thereby implements an entire audio enhancement communication system.

Fig. 9 show briefly shows a basic flow chart diagram of a simplex mode acoustic enhancement communication procedure which employs one or more audio enhancing circuit which is able to produce at least one single channel flow chart or at least one band consisting of at least one or three second bands of audio signals that flows throughout of (a) an entire system's signal flow enhancement communication system.

Fig. 10 A to 10-B 10 C briefly illustrates external the procedure of external operation tuning and adjusting of at least one, at least two or at least three audio enhancing circuits connected to a communication system which thereby implements an acoustical enhancement communication system for operation.

Appn. Number: 10/050,193

Appn. Filed 01/16/2002

Reply to Non-Compliant Amendment of 11/8/04 and Office action of 8/8/05

Amendment to the Specification

Please add the following **new** section of drawing figures to the drawing figure section of the specification after page [13]:

[Page 13.1 etc] Fig. 1A briefly demonstrates a signal flow chart illustrating a two-way or duplex-mode audio enhancement communication procedure that includes original audio signals and three divided bands of enhanced audio signals flowing through at least two audio enhancing circuits that are connected to a communication system which thereby forms a duplex-mode acoustic enhancement communication system.

Fig. 3H to Fig. 3J illustrates novel connection terminals and connection procedure in which a three-way crossover network circuit is converted into a one-way audio enhancing circuit to form an acoustic enhancement circuit, such as a variable one-way crossover network circuit or variable acoustical composite filter circuit for connections to a communication system.

Fig. 8 A shows a schematic rough draft diagram illustrating connections of an entire duplex-mode acoustical enhancement communication system which employs an audio enhancing circuit, such as a crossover network circuit having one control unit, which thereby respectively controls transmitting audio signals and receiving audio signals.

Fig. 8 B shows a schematic rough draft diagram illustrating connections of an entire alternative duplex-mode acoustic enhancement communication system which employs an audio enhancing circuit, such as an audio equalizer circuit having one control unit that respectively controls transmitting audio signals and receiving audio signals.

Fig. 8 C shows a schematic rough draft diagram illustrating connections of an entire alternative duplex-mode acoustic enhancement communication system which employs two stereophonic circuits and provide an alternative stereophonic technique using two summing amplifiers and an inverting amplifier.

Fig. 8D shows a rough draft diagram illustrating connections of a stationary house, residential, commercial communication system or telephone system in which employs an audio enhancing circuit, such as an audio equalizer circuit for the formation of a duplex-mode acoustic enhancement communication system.

Fig. 8 E shows a schematic rough draft diagram which demonstrates connections of an entire duplex-mode acoustic enhancement communication system which employs a variable one-way crossover network circuit or variable acoustical composite filter circuit having one control unit that respectively controls transmitting audio signals and receiving audio signals.

Fig. 8 F shows a schematic rough draft diagram illustrating novel terminal connections of complete duplex-mode audio enhancement communication system.

Fig. 8 G illustrates a schematic rough draft diagram illustrating connections of an entire duplex-mode acoustic enhancement communication system which employs two autonomous control units which are independent to each other and independently controls transmitting audio signals and audio receiving signals.

Fig. 8H and Fig. 8I illustrates a schematic rough draft diagram which demonstrates connections and novel connections of an integrated duplex-mode selective acoustical-enhancement communication system to form a selective 1/3-way crossover/preamp/EQ acoustic enhancement communication system.

Fig. 9A demonstrates a signal flow chart that illustrates one band or one channel of enhanced audio signals flowing through an entire acoustical enhanced duplex-mode communication system and expresses the modification procedure of original audio signals of an acoustic source and a remote communication device.

Fig. 9B illustrates a technical multiplex communication procedure for the conveyance of high quality audio signals on a limited communication spectrum that would commonly band the specific range of signals from the specific communication spectrum from the transmitting end.

Fig. 9C illustrates a technical multiplex procedure for the conveyance of high quality audio signals on a limited communication spectrum, which would normally band the specific range of signals from the specific communication spectrum from the receiving end.

reply to Office action of Election/Restriction of 8/8/05 AND Non-Compliant Amendment of 11/8/04 AND 11/14/05

Appn. Number: 10/050,193

Appn. Filed 01/16/2002

Reply to Non-Compliant Amendment of 11/8/04 and
Office action of 8/8/05

Amendments to the Specification:

Please replace the following section of reference numbers from page [14 to 18] with the following amended reference numbers page:

[Page 14-18]

Reference Numeral In Drawings

- 11 base-of filter electronic circuit board
- 14 negative terminal
- 15 positive terminal
- 17 audio integrated coupling medium
- 18 wire conductor
- 20 capacitor
- 21 inductor
- 22 male connector
- 23 female connector
- 24 signal flow
- 25 input terminal
- 26 output terminal
- 27 displaying display means
- 28 amplifying preamplifier section
- 33 (transistor) transistor-unit

34 ~~High~~ high band filter circuit

35 ~~Low~~ low band filter circuit

36 ~~Midrange~~ bad band-pass midrange filter circuit

37 ~~Engagement~~ engagement

38 ~~Tweeter~~ tweeter

39 ~~Midrange~~ midrange speaker

40 ~~Weefer~~ woofer speaker

41 communication apparatus

42 ~~Filter~~ filter circuit

43 ~~Cross~~ cross section

44 ~~Conductor~~ conductor

45 ~~Battery~~ battery

46 ~~Center~~ center pole

47 ~~Crossover~~ crossover network circuit or audio enhancing circuit

50 one element

51 two element

52 load resistor

53 signal flow

54 IC ~~chip~~ time circuit

55 Variable variable pole

56 Variable variable pole

57 Variable variable pole

58 variable pole

59 variable pole

60 variable pole

61 (Plug) audio plug for audio cable

62 reproducing reproductive audio system ~~from~~ of a motor vehicle or independent
reproductive audio system

63 audio input section ~~from~~ of a motor vehicle's audio system

64 Vee vcc terminal

65 Tune variable resistor

66 Earth earth ground terminal

67 Opposite opposite end

68 Bottom bottom end of a communication apparatus

69 One one side of a communication apparatus

70 ~~Contact~~ contact point

71 (Keypad) external monitor section or external control section

72 The the shell of a plug

73

74 ~~high-range~~ frequency signals signal

75 midrange frequency signals signal

76 ~~low-range~~ frequency signals signal

77

78 ~~Volume~~ external volume switch

79 ~~Top~~ top of external switch

80 ~~Bottom~~ bottom of switch

81 (Notch) notch of external switch

82 (Knob) knob of variable external switch

83 ~~Tuner~~ variable external switch

84 ~~Microphone~~ microphone

85 ~~Receiving audio~~ receiver section

86 ~~transmitting audio~~ transmitter section

87 audio port

Appn. Number: 10/050,193

Appn. Filed 01/16/2002

Reply to Non-Compliant Amendment of 11/8/04 and Office action of 8/8/05

Amendment to the Specification

Please add the following **new** section of reference numbers to the drawing numeral-reference section of the specification in consecutive order after page [18]:

[Page 18.1 etc.]

- 73 alternative audio enhancing circuit
- 77 transceiver
- 88 full range speaker system
- 89 remote communication audio signals
- 90 input gain-control circuit
- 91 high-range frequency-gain control circuit
- 92 midrange frequency-gain control circuit
- 93 low-range frequency-gain control circuit
- 94 variable frequency control circuit
- 95 threshold control circuit
- 96 radio frequency amplifier circuit
- 97 demodulator circuit
- 98 audio amplifier circuit
- 99 stereophonic circuit or audio enhancing circuit
- 100 audio equalizer circuit or audio enhancing circuit

- 101 first communicative channel of audio enhancing circuit
- 102 second communicative channel of audio enhancing circuit
- 103 1.3/3.1-way crossover network circuit, digital/analog frequency divider circuit or audio enhancing circuit
- 104 hybrid network
- 105 anonymous or poor quality remotely communicating signals
- 106 enhanced signals
- 107 antenna
- 108 remote transmitter
- 109 remote receiver
- 110 a first external monitor section
- 111 variable external bandwidth and/ millisecond-control circuit
- 112 a second external monitor section
- 113 variable external treble control circuit
- 114 variable external bass control circuit
- 115 variable external high frequency range control circuit
- 116 variable external band-pass range frequency control-element
- 117 variable external low frequency range control-element
- 118 variable external dB gain control-element
- 119 selection switch
- 120 external variable sub-master control circuit
- 121 internal control unit
- 122 stationary communication system
- 123 internal variable master control circuit

reply to Office action of Election/Restriction of 8/8/05 AND Non-Compliant Amendment of 11/8/04 AND 11/14/05

Appn. Number: 10/050,193

Appn. Filed 01/16/2002

Reply to Non-Compliant Amendment of 11/8/04 and
Office action of 8/8/05

Amendments to the Specification:

Please replace this section of the specification page [19 to page 46] with the following amended section of the specification:

Detail Description

[19-46] In the illustration Fig. 2, the an integral portion of content for electronic integrated elements embark on a circuit board 11 which is the base of (a) filter circuit circuits or audio enhancing circuits according to the provided application. It is (a) thin piece of Perf board an electronic circuit board made of a plastic material or semi-conductive silicone materials. The board is 2x2 in length and 2x2 in width and it is employed to integrate electronic elements during the composition procedures of audio enhancing circuits and connections thereof. It can The circuit board may be miniaturized into a micro chip for a better enclosure(,) or it can may be modified (in) any to various dimensions or formations and tailored to encompass relative applications of the presented nature formation depending on the criteria of the application thereof.

The following specification refer to an audio enhancing circuit, such as an audio enhancing circuit that is designed for enhancing audio signals or original audio signals that derive from a source of interest, such as at least one acoustic source which may be vocal acoustic source. Said audio enhancing circuit is an audio processing circuit, such as an audio equalizer circuit or other audio circuit that enhances audio signals, such as a crossover network circuit in which enhances said originals audio signals to refine acoustic value or perimeter for the conveyance of the enhanced audio signals for means of enhanced acoustic communication. Furthermore, said audio enhancing circuit consist of at least one audio input port or at least one audio input section that is capable of inputting said original audio signals from said acoustic source to said audio enhancing circuit, and further said audio enhancing circuit is able to be integrated with other audio enhancing circuits herein. Therefore, the integration of said audio enhancing circuit is capable of implementing comprehensive audio enhancement communication procedure thereof. For the conveyance of high quality audio signals herein, multiplexing technique may apply, as stated in the subsequent section hereof. Under the provided terms, the The description Fig. 3E below illustrates (a) an audio enhancing circuit, such as said crossover network circuit connecting to (a) the input port coupling means(,) for a responding the correspondents of said original audio signals from said acoustic source, such as a microphone. The microphone then input outputs signals that thereby emits to said crossover network circuit. Thus, the communication procedure employs the enhanced audio signals with the corporation of the audio enhancing circuit that process the signals to refined degrees according to variable technical arrangements herein. This procedure implements a mode that communicates enhanced acoustic signals in at least one direction. Therefore, this method is entitled, The Simplex-mode Acoustic-Enhancement Communication Method.

Fig. 3E illustrates(,) (a) port coupling means an input-port 87 for inputting said original audio signals from the output section of the microphone thereby connecting said original audio signals from said output section of said microphone to the main input 25 of a high band-pass filter circuit in of a crossover network circuit. From the positive terminal 15 of (a) the high band-pass one-element one-element filter circuit, a contact is made to a conductor 44. From the opposite end of the same said conductor, a contact is made to the positive terminal 15 of (a) the port coupling means input-port 87 for inputting said original audio signals of said microphone. From the negative 14 terminal of the same input-port port coupling means , a connection is made to the negative terminal of said high band-pass band-pass one element filter circuit.

Fig. 14 Fig. 4D illustrates (a) the connection of a 5-volt battery from (a) the power source of a communication apparatus apparatus's power source (, to a crossover network circuit or audio enhancing circuit. The positive terminal **15** from a one-element high band-pass filter circuit is connected to a conductor. At the opposite end of said conductor, a contact is made to the positive terminal of a 5 volt battery **45**. The negative terminal **14** of the same battery is connected to a conductor. From the opposite end of the same conductor, a connection is made to the negative terminal of a one element low band-pass filter circuit.

Fig. 3C ~~show~~ shows a schematic diagram of three band-pass filter ~~circuit~~ circuits and illustrates the ~~forming~~ formation of a crossover network circuit, which is provided to this application as an audio enhancing circuit tailored for the incorporation of a communication apparatus. A one-element one-element high band-pass filter circuit 34(,) lay adjacent to a two-element two-element 51 high band-pass midrange series filter circuit 36 (34). A one element one-element low band-pass filter circuit 35(,) lay adjacently below both the one-order high band-pass filter circuit and the two order band-pass midrange filter circuit circuits. In the illustration Fig. 3C and 3A, the elaboration of constituent elements expresses the constitution of an audio enhancing circuit, such as a 3-way crossover network circuit. From one end of an inductor from (a) the low band-pass filter circuit's positive terminal, 15 an intersection is made, crossing 43 (a) the negative conductor 44 of (a) the high band-pass two-element (51) mid-range filter circuit and making makes a connection 70 at the positive terminal 15 of the same said high band-pass two-element midrange filter circuit(,) coming and comes in contact with one side of a series coupled inductor 21.

From the same contact **70** point of the band-pass filter circuit, another intersection is made crossing **43** a second negative conductor **44** of (a) said high band-pass one-element **50** filter circuit(,) and making contact **70** at the circuit's positive terminal(,) **15** and one side of a capacitor. From the negative terminal **14** of (a) the same low band-pass one-element filter circuit(.), (A) a connection **70** is made(,) to (a) the negative conductor **(44)** of (a) said high band-pass two-element midrange filter circuit. From the negative conductor conductor's connection point **70** of the same high said band-pass two-element midrange filter circuit, a second contact is made to the negative terminal **(14)** of (a) said high band-pass one-element filter circuit, by the main input terminals of said crossover network circuit herein.

Fig. 3A shows a formed crossover network circuit and demonstrates the flow of audio signals. A three-way crossover network **47** is then formed, leaving a main input section **25** at the high band-pass one-element filter circuit's terminals or the low band-pass filter circuit's terminals. From the main input section of the crossover network circuit, Output signal output signals **26** flows flow **53** to the opposite side of the circuit's terminals(,), as illustrated Illustrated in Fig. 3B, where in which illustrates, the low low-range signal audio signals **76** outputs outputting at a low band-pass one-element filter circuit, the high signal high-range signals **74** output outputting at a high band-pass one-element filter circuit, and the midrange signal(,) signals **75** outputs outputting at a two-element high band-pass filter circuit.

Illustrative Fig. 4H illustrates a method of constituting control means in an audio enhancing circuit, such as a crossover network circuit which incorporates a communication system in which thereby enables the acoustic enhancement communication system to tune and control audio signals while communicating said audio signals to a corresponding communication system therein. At least one of each control element may apply to this application as follows: a variable input dB gain control circuit 90 connected to the main input terminals of the crossover network circuit for varying the gain of input signals, a variable millisecond delay control circuit 54 connected to said crossover network circuit, a variable low dB gain control circuit 93 connected to a section of the low band-pass filter circuit 35 for varying the gain of low band range audio signals, a variable low-range frequency control circuit 94 connected to the low band range filter circuit whereby varying the frequency range of low-band pending audio signals thereof, a variable high frequency gain control circuit connected to a section of the high band-range filter circuit 34, a variable mid frequency gain control circuit 94 connected to the two element mid band pass filter circuit 36 for varying the gain of mid-band range audio signals, a high frequency dB gain control circuit 94 connected to the one element high band-pass filter circuit for varying the gain of high range audio signals, a variable master dB gain control circuit 123 connected at the output of the crossover network circuit and a threshold dB control circuit connected to said crossover network circuit. Fig. 4E show shows a switch, (a) an IC chip, control means tunable means and peaking means(,) and illustrates the constitution of a unique an integrated control circuit of an audio enhancing circuit, such as a crossover network circuit. The center pole of a switch comes in contact with is connected to a MF8 IC timer chip. The diagram in Figs. 4A to Fig. 4G and Fig 4E illustrates illustrate connections of a switch and (a) an IC chip timer. From a positive 5-volt 5-volt positive Vee terminal, 15 contact 70 is made to the center-pole 46 of a multi-position rotary switch. From (a) an output (26) point section of the IC timer chip 54, a contact (70) is made to (a) the conductor of a male connector. The male connector thereby engages 37 with a female connector.

From the opposite end of the same female connector's conductor, **44** a contact is made to one side of a tunable ~~resistor's~~ resistor **65**. From the connection point **70** of the tunable resistor, a connection is made to the positive terminal **15** of a one-element high band-pass filter circuit. From the output section of a one-element low band-pass filter circuit, a connection is made to the opposite side of the same tunable resistor then to a conductor of a male connector. The male connector then engages with a female connector. The female connector's conductor then ~~make~~ makes a contact **70** to the negative **14** output terminal of the same acoustic IC timer chip.

The multi-position rotary switch connections are voluntarily provided to the one-way communication method and the multi-position rotary switch and its connections are not important elements of the control means, control units, the audio enhancing circuits or this application in its entirety. Therefore, due to its inessential characteristics that may apply with the employment of said multi-position rotary switch, as result, employment of the rotary switch in the audio enhancement communication system may be completely omitted from this application in its entirety. Thereby, the communication procedure retains the ultimate variable or invariable audio enhancement communication system herein. Fig. 4 A illustrates a multi-position rotary switch connecting at the input of a ~~crossover network crossover network circuit for the variation of operational adjustments within a communication system and the crossover network device~~. Horizontally to (a) the right from the center pole 46(.)₁ (A) a variable pole 55 using a conductor, 44 makes a contact 70 to the negative input terminal 14 of a low band-pass 34 one element (50) filter circuit. From the positive terminal 15 of the same low band-pass filter circuit, a conductor makes a connection at its opposite end to a variable pole, which is pole number 56, the pole that is adjacent to pole 55. The pole (that's) that is vertically upward from the center pole 46 is pole 57. From a conductor, pole 57 makes contact with the negative terminal 14 of a high band-pass midrange 36 two element 51 filter circuit.

From the positive input terminal **15** of the same, two order element high band-pass **(34)** midrange **(36)** filter circuit, **36** a (.) (A) conductor makes contact with a variable pole adjacent to pole **57**, which is pole **58**. From a conductor, a pole **60** horizontally to the left from the center pole **46** makes contact to the conductor's opposite end(,) then to the positive input terminal **(15)** of a high band-pass one element **50** filter circuit. A variable pole **59** that's adjacent to pole **60**(,) then makes contact from a conductor's end(,) to the negative terminal **14** of the same high band-pass one element filter circuit thereby forming a section of the control means thereof.

Fig 4G In the illustration Fig. 3F, the diagram ~~consist~~ consists of more than one audio channels channel and illustrates a connecting connection method, thereby illustrating demonstrating connections from a amplifier crossover network circuit or an alternative audio enhancing circuit, 73 as a primary audio circuit, to (a) an audio preamplifier circuit 28. crossover network According to the acoustic communication system, as recited, an audio equalizer circuit or other audio enhancing circuits may be individually adapted in substitute of said crossover network circuit, or additionally, the acoustic communication system may simultaneously be integrated with other audio enhancing circuits. In this context, said audio preamplifier circuit is able to be positioned as a primary audio enhancing circuit. Therefore, the application is able to subsequently position said audio equalizer circuit and said crossover network circuit thereby respectively configuring the enhancement procedure of said audio signals for the generation of subjectively-arranged, perceivable, quality communication signals hereof. The transistor elements used in the illustration shows (several) (engagements) from (a) ~~crossover network~~ (circuit,) to the input (of) (an) ~~amplifier~~ (circuit.)

Illustrated in (Fig.) 6A Fig 6C and Fig. 3D illustrates a three divided channel connections connection-procedure from the output of a crossover network circuit, (.) Fig. 6A illustrates connections to the input of a amplifier circuit an audio preamplifier circuit from a crossover network circuit. This one-way acoustic enhancement communication method, may employ the preamplifier circuit, which is utilized hereafter to input enhanced pre-amplified audio signals into a transmitter, as the primary audio enhancing circuit inverse to the technical arrangements of the one-way audio enhancing method, as stated below. Therefore, the application would practically initiate the procedure with said preamplifier circuit as the first audio enhancing circuit then the crossover network circuit as the second audio enhancing circuit. Conformably, with respect to controversial reasoning, said preamplifier circuit may be completely extracted from this one-way audio enhancing communication method to comply with the presented criterions of the designated application. Fig. 3C shows an input point and (a) output point points on of said crossover network circuit. Together, illustration Fig. 3C, Fig. 3D, and Fig. 6A shows output and input connections whereby constituting a connection method for communicating enhanced audio signals to a communication system. From the positive 15 output terminal of a high band-pass 34 one-element (50) filter circuit, contact is made to the conductor of a male connector(.) 22. From the same male connector, an engagement is made with a female connector 23.

From (a) the female connector's conductor, a contact is made to the positive input base terminal **15** of a ~~transistor~~ transistor-unit **33** at the first channel of the audio preamplifier circuit. From the input negative earth ground terminal **66** of the same ~~transistor~~ transistor-unit of said audio preamplifier circuit, at said first channel, a contact is made to the conductor of a female connector **23**. From the same female connector an engagement is made with a male connector **22**. From the same male connector's conductor, **44** a contact is made to the negative output **26** terminal (14) of (a) the one-element (50) high band-pass **34** filter circuit. From a second channel at the an input load resistor's 52 positive terminal() **15** of an input load resistor 52 of a second transistor-unite of said audio preamplifier circuit, a contact is made to the conductor **(44)** of a female connector **23**.

From the female connector, an engagement is made with a male connector 22. From the same male connector's conductor, (44) a contact is made at the output **26** positive terminal **15** of a two-element (51) high band-pass (34) midrange filter circuit **36**. From the negative output terminal **14** of the same said band-pass two-element midrange filter circuit, (.) (A) a contact is made to the conductor (44) of a male connector (22). From the same male connector, an engagement is made to a female connector **23**. From the same female connector's conductor, a contact **70** is made at (a) an earth ground **66** negative terminal **(14)** of (a) the second audio transister transistor-unit **33** of said second channel of said audio preamplifier circuit.

From a second third transistor unit **33** of said a third channel of the same audio amplifying preamplifier circuit section, a contact is made from the positive terminal **15** of (a) said second transistor transistor-unit (,) at the base input terminal(,) of said audio preamplifier circuit to the conductor of a female connector. From the female connector, **23** an engagement is made to a male connector **22**. From the same male connector's conductor, contact is made at the positive terminal **(15)** of a low band-pass **35** one element **(50)** filter circuit. From the same low-band **(34)** low band-pass one-element **(50)** filter circuit's output negative output **26** **(14)** terminal terminals, a negative connection **70** is made to the conductor **44** of a male connector. From the same said male connector, of the low band-pass filter circuit an engagement **(37)** is made with another a female connector. From the same said female connector, a connection is made to (a) an input earth ground negative terminal of the same said third transistor-unit audio amplifier's transistor of said third channel of said audio preamplifier circuit.

In reference to lineal acoustic band or channel configuration, a subsequent method is provided hereafter, which is entitled *The Digital Lineal Value-1 Downward Modification Technique*, in which explicates the lineal technique in a prospective application where, the employment of three or more divided bands of audio signals may alternatively be substituted with the substantial conditions that implement conservative techniques that provides the employment of an at least one serial transmission channel or at least a one serial transmission band filter circuit, of which employs at least one value and/or band of audio tone and channels one or more bands of the audio signals which, derive from the same acoustic source. Therefore, the one band of audio signals is capable of being employed in substitute of the at least three parallel (analog) bands or channels of audio signals. Whereby, the one serial-transmission channel respectively communicating the at least one enhanced- band or channel of audio signals to a secondary audio enhancing

From a audio amplifier said audio preamplifier circuit **28**, as illustrated in connection Figure 6D, (a) high frequency band range of output signals **74** demonstrated in Figure 1 flow chart, (is) are connected to an the input channel of (a) a transmitting audio section transmitter **86**. From a mid-range band of output signal audio signals **75** from said audio preamplifier circuit amplifier, a second connection is made to a second input channel of said transmitting audio section transmitter. From a low band range of output signal signals **76**, a third connection is made to a third input channel of said transmitting section transmitter. From the output section of said transmitter, the three bands of audio signals are connected to the input of a hybrid network **104**. From the output section of said hybrid network, said three bands of audio signals are then respectively connected to the input of a receiver **85**. The three bands of signals that are connected from the output section of said hybrid network are received as passively enhanced audio signals that are provided for a side tone hereof.

Fig. 1 roughly illustrates signal flows a diagram of a one-way or a simplex-mode acoustic enhancement communication procedure consisting of an audio enhancing circuit that generates three bands of enhanced audio signals which thereby flow throughout the selectable components of the communication system for producing explicit audio signals thereof. Said communication system also consists of a hybrid network that is employed for producing a side tone in said communication system. In this manner, the box diagram of the illustrative figure, demonstrates the flows of signals from (a) audio- an acoustic source, such as a transducer 84. From the output section of the microphone, plain or original audio signals are injected into a primary audio enhancing circuit, which happens to be a 3-way crossover network circuit that hereby produces three parallel-band bands of enhanced audio signals, a band of high-range audio signals, a band of midrange audio signals and a band of low-range audio signals. From the output section of said 3-way crossover network circuit, the three bands of crossover audio signals are respectively injected into three channel of an audio preamplifier. From the output section of the preamplifier, the three bands of pre-amplified audio signals respectively flows into three input channels of a transmitter contact point to the input channels of a receiving audio section. From a first output channel of said transmitter, 70 (a) high range high-range band of audio output frequency signals from said transmitter (,) (a) contact 70 is made flows to a first input channel of said hybrid network then outputs into to one a first input channel of a receiving receiver section. From a midrange second output channel of said transmitter midrange band of output signals contact point audio signals 70, (a) flows connection is made to a second input channel of said hybrid network. From a second output channel of said hybrid network, said midrange band of audio signals flows to a second input channel of said receiving audio section receiver. From a low third output channel of said transmitter, a low-range band of output audio signals contact point (70,) a third flows connection is made to a third input channel of said hybrid network herein. From a third output channel of said hybrid network, said low band range of audio signals then flows to a third input channel of said receiving audio section receiver hereof. Fig. 6C illustrates display means respectively coupling to said receiver and Fig. 1 further illustrates a block diagram of signal flowing throughout the communication system therein respectively flowing through said displaying means which results with the capabilities of exhibition for balancing and monitoring acoustic levels herein. In Fig. 6C, (A) a display apparatus 27 is coupled respectively to said the transistors of the receiver thereby displaying the status of the audio signals of said communication system herein. receiving output signals then to an integrated cable where it then couples (with a) (external audio system.)

Fig. 6D Shows a schematic diagram of a transceiver that illustrates a three channel connection procedure, which may be consequently employed for connections that follows the employment of an audio enhancing circuit that may consist of more than one channel in parallel, such as a 3-way crossover network circuit. In that respect, the diagram briefly demonstrates inside connections from (a) an audio preamplifier circuit amplifier to the input of a primary audio circuit of a transmitter and from the output of said transmitter to a hybrid network and out from said hybrid network and into a receiver receiving section and a transmitting input (section.) In the illustrative description below, connections initiate from a secondary audio enhancing circuit, which happens to be an audio preamplifier circuit 28. From the audio enhancing preamplifier circuit, output audio input channels are first connection connected to a transmitting section transmitter 86. Fig. 6D illustrates connections of the further elaborate terms as follow. From a first channel of said audio enhancing preamplifier circuit, a (A) positive input connection is made to the positive 15 base terminal of a transistor-unit (,) in of (a) said primary audio circuit, such as an audio amplifier circuit of said transmitter transmitting audio section. From said first channel of said audio enhancing preamplifier circuit, a (A) negative 14 input connection is made to the earth ground terminal 66 of the same transistor-unit (,) in of said primary audio circuit of said transmitter audio section. From a second output channel of said audio-enhancement preamplifier circuit, a (A) positive (15) input connection is made to the base terminal of a second transistor-unit in of said primary audio circuit of said transmitter said transmitting audio section.

From said second output channel of said audio enhancing preamplifier circuit, a (A) negative input connection is made to the earth ground 66 terminal of said second transistor-unit of the transmitter section. From a third output channel of said audio-enhancement preamplifier circuit, a (A) third input connection is made to said second transistor's the positive base terminal of a third transistor-unit in of said audio transmitter section. From said third output channel of said audio enhancement-preamplifier circuit, an (A) input connection is made to another a ground terminal of said third second transistor-unit (,) in of said audio transmitter section. From the output section of the transmitter, three output channels of the transmitter are respectively connected to three input channels of a hybrid network.

Fig 6D illustrates (a) an audio input connection(,) procedure from three out channels of the hybrid network the above plurality of audio sections to three input channels of a receiving section. From a first output channel of the hybrid network, a (A) positive **15** input connection is made to the base terminal of a transistor transistor-unit (,) in (a) of the receiving audio section receiver **85**. From said first output channel of said hybrid network, a (A) negative input connection is made to the earth ground terminal **66** of the same transistor transistor-unit (,) in of said audio section receiver. From a second output channel of said hybrid network, a (A) positive input connection is made to the base terminal **(15)** of a second transistor transistor-unit of said receiver. From said second output channel of the hybrid network, a (A) negative input connection is made to the earth ground terminal of said second transistor transistor-unit of said receiver. From a third output channel of said hybrid network, a (A) third input connection is made to the said second transistor's positive base terminal of a third transistor unit of said receiver.

A third connection is then made from the same third output channel of said Hybrid Network to another input ground terminal of said second transistor(,) third transistor-unit in of said receiving audio section receiver herein. In the diagram Fig. 6D, a schematic rough draft provides the illustration of a transceiver, constituent sections, a receiver or a segment of said receiver and diverse view of segment of the communication system in which enhanced audio signals flows from the output terminals of the receiver to a speaker system.

Fig. 1 and Fig. 3F illustrates diagrams of a signal flow chart showing signals flowing from the output section of a receiver to three separate band ranged speakers thereof. From (a) an out put output contact point channel of from said the receiving receiver section, high frequency audio signals (is) are connected to a tweeter 38. From a second output contact point channel of from said receiving receiver section, midrange frequency audio signals (is) are connection connected to a midrange speaker 39. From a third output channel contact point from of said receiving receiver section, low range frequency audio signals (is) are connected to a woofer speaker 40.

An external dispensable port or external acoustic-connection implements a dispensable coupling method, which is entitled, *The Reconceivable Voluntary Dispensable Coupling Method*. This extraneous coupling-method is briefly expressed in the following interpretations.

Illustration Fig. 6B(.) , Fig. 6E, Fig. 6F and Fig 6G Illustrates (a) connection demonstrates connection procedure, which is precondition according to the conditions that an audio enhancing circuit provides. For instance, a 3-way crossover network produces 3 bands of audio signals. Therefore, Fig. 6E illustrates the specified coupling arrangements of this manner etc. Accordingly, connections are made from (a) an autonomous indispensable receiving receiver section of a communication system to (a) an external dispensable output-section coupling , audio port, or a wireless acoustic system having said output audio section adapted for the voluntary external coupling procedure that incorporates an audio reproductive system of a motor vehicle or other independent audio reproductive systems with a communication apparatus thereof. From the positive 15 collector output terminal of a transistor(.) (on) of a receiving receiver section, a connection 70 is made to a series capacitor. At the opposite end of said capacitor series capacitor, contact is made to the positive terminal (15) of (a) female port coupling means the dispensable output port 87 of the receiver. From the negative terminal 14 of said port coupling means dispensable output port, a conductor 44 comes in contact with (a) an earth ground terminal at the opposite end of said conductor in of said receiver.

Fig. 5A to 5G. shows (a) an audio cable comprising (a) an integrated circuit(,) adopted to couple externally with a communication apparatus and oppose a band of frequency. wherein Wherein, a positive right side conductor wire is parallel to a negative left side conductor wire and they both flow in a separate parallel motion, having one side of the circuit conducting low range range frequency and the other side conducting high range frequency. The internal Internally, the integrated cable consist consists of(,) two wires, which runs parallel until the output plug contact points. The cable further consist consists of two separate filter circuit circuits (,) adjacent to each other. Said integrated circuit is an insignificant segment of said audio cable. Therefore, the integrated circuit is not essential to said audio cable. Consequently, an alternative method of coupling the cable from said communication apparatus to an external reproductive system may exclude or omit said integrated circuit from the application. Thereby, said audio cable will be able to be employed as an independent entity, and completely eliminates said integrated circuit from the coupling method or application herein.

Fig. 5A to 5G. illustrates connection procedure of the audio cable comprising the integrated filter circuit which is able to couple externally with a communication apparatus. From the left side of a plug, a conductor wire **18** makes contact to one end of an inductor. A second conductor wire(,) makes a contact from the opposite end of said inductor **21** to the left side of a second plug. From the right side of said second plug **61**, a conductor wire **18** makes contact to one end of a capacitor. A second conductor(,) then makes contact to the opposite end of said capacitor. At the opposite end of the same conductor-wire, **(18)**, a connection is then made to the right side of the first plug **61**.

Fig. 8 Fig. 9 (Illustrate) Illustrates a ~~raff~~ rough draft view of signals flows an audio signal flowchart demonstrating one band or one channel of audio signals communicating throughout ~~through~~ out an entire acoustic enhancement communication system. The method of one band or one channel communication employs a unique 1.3-way tunable crossover network or tunable serial-transmission frequency divider circuit having only one output channel whereby producing only one channel of plural band enhanced audio signals for communicating the enhanced audio signals to a communication system. Thereby, the one-way tunable crossover network or tunable serial-transmission frequency divider circuit driving at least one speaker system, which depends on the arrangement of the application hereof, ~~through~~ out a Signal Signals flows flow 53 from (a) microphone output the output-section 26 of a microphone 84 then throughout the acoustic enhancement communication system. Horizontally to the right of said microphone is a crossover network one-way crossover network circuit or tunable serial-transmission frequency divider circuit. From the microphone's the output section signals of said microphone, original audio signals are sent to the input port 87 or input section of a 3-way crossover network the 1-way crossover network circuit or tunable serial-transmission frequency divider circuit 103 which consist of a 3-way crossover network, and a serial transmission IC timer circuit. From then on, the original audio signals are generated into three, then one multi-band or one-multi channel of enhanced audio signals. The one band or one channel of filtered enhanced audio signals that emit from said 1-way crossover network circuit or tunable serial-transmission frequency divider circuit is then applies input signals applied to the input of a an audio amplifier preamplifier 28. Horizontally to the right of said audio amplifier preamplifier is (a) an adjacent audio transmitting transmitter section 86 that is enclosed with an adjacent receiver in a transceiver device. Said The one band or channel of enhanced amplified pre-amplified audio signals that output from the said audio preamplifier amplifier (is) is entered into then injected into said adjacent transmitting transmitter section. From the output section of the transmitter, said one band or one channel of enhanced audio signals is injected to the input of a Hybrid Network 104. Vertically to the left of the adjacent transmitter transmitting device 86 is (a) receiving audio section the adjacent receiver section 85, where The one channel of multi-band audio signals from the output of said Hybrid Network are said input signals are respectively join to the injected to the input of said audio receiving the receiver section. Whereby, the received enhanced audio signals drives at least one full range speaker or a speaker system of the communication system. However, providing that, said receiver section consist of an integrated retrieval circuit at the end audio circuit of the receiver that is able to retrieve the parent divided band of audio signals which was produced by the preceding 3-way crossover network circuit that was arranged to produce and output the divided bands of audio signals to the IC timer circuit then to said receiver section that includes the integrated retrieval circuit, thereby, retrieving the received enhanced audio signals that drives at least one speaker system of the receiver hereof.

Vertically down Downward from said receiving section adjacent receiver section **85** is a an acoustic electronic integrated medium **17**, which is dispensable to said adjacent receiver section and is voluntarily adopted to transport conduct said one band or one channel of enhanced audio output signals from an external-dispensable output audio-port **87** which is employed to the receiver for coupling to an input audio port **63** of a motor vehicle's acoustic reproducing reproductive system. () Therein, where said the one band or one channel of enhanced audio signals are reproduced and then output to at least one full range speaker or a speaker system magnetic hearing aid of the motor vehicle.

Appn. Number: 10/050,193

Appn. Filed 01/16/2002

Reply to Non-Compliant Amendment of 11/8/04 and
Office action of 8/8/05

Amendments to the Specification:

Please replace this section of the specification page [47 to page 67] with the following amended section of the specification:

Operation Fig. 7 to 10,

and Fig 3B

[47- 67] (A) The operation procedure is provided for the at least one audio enhancing circuit, such as the crossover network circuit which consist of the at least one input port or input section for injecting microphone output signals and control means for controlling the microphone signals or/and the at least two other audio enhancing circuits, which forms the selective 1.3-way/3-way crossover/audio-filter/ audio-preamp/ audio equalizer enhancement communication system coupled with a communication apparatus(,) and an with the dispensable coupling means for voluntarily coupling the acoustic integrated medium(,) join with a from the communication system to the external reproducing reproductive acoustic system of the motor vehicle or the independent audio reproductive unit.

One would start operating the integrated acoustic enhancement communication apparatus by connecting the system for operation, which is illustrated in the pictorial view in Fig. 7A and Fig 10C. From this aspect, the microphone 84 is provided as the acoustic source of interest. (.) One must first hold (a) the microphone's coupling medium 17(,) gripping (a) the plug 61 by it's shell(,) then insert the plug into (a) the microphone's external input 25 port 87, located on one side of (a) the integrated acoustic-enhancement communication apparatus, as illustrated in Fig. 7A and Fig 10C. After the microphone is in, (a) the filtering coupling medium with (a) the 1/8 inch plug ~~at each end~~(,) is may voluntarily be applied to one a dispensable audio port, at the bottom side of (a) said integrated acoustic enhancement communication apparatus 41 by gripping one end of (a) the 1/8 inch plug's shell, 72 as illustrated in Fig 7B and Fig. 7E, and then insert inserting the plug (at) the bottom side 68 of said communication apparatus into (a) female the dispensable output 26 port 87 of the (a) receiving receiver section located at the bottom side 68 of said communication apparatus. At the opposite end of the same coupling medium, shown in Fig. 7C and Fig. 7F, and apply a connection to the input port 25 of (an) the external reproducing audio reproductive system of the motor vehicle or other independent audio reproductive systems that is coherent to the application hereof system. When the connections are through (with)(.), Press press the power button on said communication apparatus to apply current power signals throughout the entire circuit system.

When (a) audio signals input to said microphone, electronic audio function (is) executed the signals signal flow flows throughout throughout the integrated acoustic enhancement communication system(), then couples externally to an the external independent reproducing reproductive system. (Figs.) Figure 3B₁ and Fig. 1 illustrate and Fig. 1A illustrates the flow of a plurality of divided band signal audio signals, and Fig. 9 and Fig. 9A illustrates a single band of audio signals flowing throughout the the said integrated acoustic enhancement communication system. From (a) microphone the output terminal or output section of the microphone or acoustic source 84(), Input output signals from said microphone are applied to (a) the audio enhancing circuit such as the audio preamplifier circuit, the audio equalizer circuit, the three-way electronic crossover network circuit 47, the tunable one-way crossover network circuit or tunable digital/analog frequency-divider circuit or other audio enhancing circuits hereof. Signals With the employment of the 3-way crossover network circuit, audio signals are then divided into three different band bands of frequencies(.) illustrated in Fig. 3B. (A) high The high-range band of frequency() 74 which initializes emits from (a) the high band-pass pass filter circuit(), (A) the midrange band of frequency, 75 which initializes emits from (a) the two element high pass band-pass filter circuit() and the low-range (a) low band of frequency() 76 which(), outputs from the (a) one element low band-pass filter circuit.

The integrated audio enhancing circuits are capable of being select for operation, such as said audio preamplifier circuit, said audio equalizer circuit, the 1-way crossover network or tunable digital/analog frequency-divider circuit or said equalizer circuit. In this manner, when the 1-way crossover network or tunable digital/analog frequency-divider circuit is selected, it is capable of emphasizing at least one or three specified magnetic field thereby driving at least one dual cone speaker herein or a various range speaker system.
An the other hand, the operation procedure may employ an audio enhancing circuit, such as said 3-way crossover network circuit, which thereby provides at least three bands of audio signals adopted for driving a variable range speaker system hereof. The at least one band or three signals bands of audio signals are then applied at to the input of an the secondary audio enhancing circuit amplifier(), then input to (a) transmitting the transmitter section 86. From the output section of the transmitter, where said the audio signals makes another input connection to the input of a Hybrid Network. From said Hybrid network, signals are then injected to the input of the receiver receiving section(.) 85. The same at least one band or three separate bands of output signal signals from the said receiving receiver section(.) is are applied to (a) the female output port 87. When said port output port is coupled with (a) external audio cable, the signals are also voluntarily conveyed transported from the audio receiver section of the telephone integrated acoustic enhancement communication system audio receiving section to a dispensable coupling medium 17(), which() then couples to (an) the external reproducing reproductive audio system and by injected injecting the signals into (a) the (CD) Compact disc input socket, auxiliary section or other audio input sections 25(), where in which the audio signals are then reproduced in by the (an) external audio system which may be engaged with the motor vehicle, the independently audio system or the independent incorporated audio system hereof.

At least In that manner, the at least one or three individual band bands of audio frequency signals are sent to the (a) transmitting input section(,) of the transmitter in which where said the enhanced audio signals are transmitted to the adjacent receiving section of the communication system and the (a) remote communication device. Thereby, the user is capable of magnificently communicating said enhanced audio signals to the correspondent user at the opposite end, and said enhanced audio signals are capable of communicating high degree of acoustic quality audio signals thereby enabling superb perception in comparison to a common communication systems hereof. Sound

Audio frequency signals (on) in (a) the telecommunication apparatus (is) are controlled tuned by (a) switch the control means(,) located on (a) keypad the external monitor section 71, illustrated in Fig 10A and Fig. 10C. One can start adjusting the frequency frequencies for operation by selecting a band network of frequency for operation adjustment. Using your hands, grip the knob 82 of (a) the rotary switch(.) Twist then twist said knob to the appropriate selected notch 81. the The variable master volume level control push button pushbutton switch 78 is used to vary increase (,) or decrease the master acoustic level of the overall audio enhancing circuits of the acoustic enhancement communication device frequency selected by in respect to the selections of said rotary switch. As illustrated in Fig. 10B(.) and Fig. 10C, (Press) press on the top end 79 of the switch(,) to increase the volume of master audio level a band selected frequency .

Press on the bottom end **80** of the switch(), to decrease the volume of master audio level of the audio enhancing circuits, which thereby effect the level of the acoustic enhancement communication system herein a band selected frequency. Fig. 10C further illustrates the external monitor section **71** that includes display means **27** for displaying the current status and said external monitor section for monitoring said current status of the audio enhancing circuits that includes the first section **110** consisting of control elements for said 3-way crossover network circuit and said tunable one-way crossover network circuit or tunable composite filter circuit, which is located at the left side of the external monitor. The selection switch **119** is provided, which is employed to execute the common that enables the selection of the 3-way crossover network circuit and the tunable one-way crossover network circuit or tunable digital/analog frequency-divider circuit. When said selection switch is switched to the symbol 3-W position, it indicates that the three way crossover network circuit is selected for operation, and when said selection switch is switched to the symbol 1-W position it indicates that the tunable one-way crossover network circuit is selected for operation. Adjust the 1-way/3-way crossover network's master volume unite **120** control element to vary the master volume of the 3-way/1-way crossover network or tunable filter circuit hereof. To vary the width of the band of frequency and to set the millisecond time interval, vary the band frequency band width/mSec. control circuit **111**. Vary the 3-way/1-way crossover network or tunable filter circuit's external variable gain control element **118** to vary the volume of a band of audio signals of said 3-way/1-way crossover network or tunable filter circuit. A) Vary the external variable high frequency range control element **115** to adjust the high range frequencies of said 3-way/1-way crossover network or the tunable filter circuit. B) Vary the external variable midrange-frequency control element **116** to adjust the midrange frequencies of said 3-way/1-way crossover network or the tunable filter circuit. C) Vary the external variable low-range frequency control element **117** to adjust the low-range frequencies of said 3-way/1-way crossover network or the tunable acoustic filter circuit. The external monitor section includes the second section **112** containing the control elements of other audio enhancing circuits, such as the audio equalizer circuit and the audio preamplifier circuit in which contain viable treble control element **113** and variable bass control element **114**. On the equalizer's external monitor section, vary the preamp/ audio equalizer's variable unit volume control element **120** to adjust the volume of a section or unit of audio enhancing circuit, such as the audio preamp/audio equalizer circuit. To vary or control the audio signals of the EQ/preamp circuit repeat step A), B) and C) on the second section of the EQ/PREAMP's external control unit.

Summary Ramifications and Scope

Accordingly, one can see that: (a) a communication system, such as a verbal communication system or a duplex communication system, such as a Telephone, Two-way radio, C.B radio, Amateur radio or other communication system hereof is comprising an audio enhancing circuit, such as an audio preamplifier circuit, an audio equalizer circuit, a crossover network circuit or other audio enhancing circuit consisting of at least one input section for inputting original audio signals from at least one output section of an acoustic source, such as a microphone is provided. In addition, said audio enhancing circuit is able to be integrated with other audio enhancing circuit and provides at least one or at least two communication channels that is capable of channeling the enhancement communication procedure according to the selected mode of acoustic enhancement communication hereof. ~~tunable crossover network~~ Furthermore, said audio enhancing circuit is capable of providing having at least one integrated band or one integrated channel of audio signals or at least three band bands of audio signals (,) is that are employed for banding and emphasizing audio signals entering said audio enhancing circuit for disposing the enhanced audio signals into at least one secondary audio enhancing circuit, an amplifying means, wherein an amplifier such as a crossover network circuit other audio enhancing circuit and a communication circuit. Therefore, said audio enhancing circuit is adopted for peaking enhances said audio signals and respectively injects inputting to said enhanced audio signals into the communication circuit, such as a transmitter which is capable of being connected to one of the at least two communication channels of said audio enhancing circuit hereof. Said secondary audio enhancing circuit disposes said enhanced audio signals to a hybrid network. From said hybrid network, transmitting section(,) where said inputting enhanced audio signals intercept are then connected to the and connects to a second input of (a) an adjacent receiving receiver section which is capable of being connected to one of the at least two communication channels of said audio enhancing circuit in which thereby enhancing emphasizing and channeling impaired audio signals entering the adjacent receiver which emits from the adjacent transmitter and from a remote communication device. The receiver section may further include includes a dispensable output port, output section or a wireless acoustic system having said output section adopted for external voluntarily coupling with (a) an acoustic electronic coupling medium, said medium that consist of an further having an unessential integrated filter circuit to oppose a plurality of frequency audio frequency. Said The coupling medium is employed for coupling with a motor vehicle's reproducing reproductive acoustic system or an independent extraneous acoustic system that is not affiliated with a motor vehicle. Said dispensable output port may be omitted from the exclusive acoustic enhancement communication system, and under these provided conditions the acoustic enhancement communication system will retain the concept of the audio enhancing circuit comprising the communication apparatus thereby sustaining the formation of the acoustic enhancement communication system hereof.

A reader may perceive that the technical acoustic configurations may individually use any preferred audio enhancing circuits for employing a mono/stereo, application or as the primary sequential circuit to constitute the acoustical enhancement section in the communication apparatus. Approximately at the same interval During the conveyance of audio signals to the independent audio system in the motor vehicle, new cycles of audio signals are initiated repetitiously on reception. (,) (the) The inputted signals to said transmitting said transmitter section(,) transmits said the plurality of audio signals to a responsive functioning means remote receiver(,) then to a remote user on (a) the receiving end. An A dispensable acoustic coupling medium combine combined with (a) the autonomous receiving section(,) could may voluntarily be used to join (a) the motor vehicle's reproductive acoustic system with (a) the communication apparatus. According to the technical aspects of this acoustical enhancement communication application, apparently, One can also see that(,) (a) crossover network the audio circuit that provides the acoustic enhancement procedure, as recited, is an audio circuit or a section of said audio circuit, such as a crossover network circuit, an audio equalizer circuit, an audio preamplifier circuit, an audio processing circuit, an audio filter circuit, an audio amplifier circuit or a miscellaneous multi-integrated circuit compact with more than one audio enhancing circuits or other multi or individually isolated or integrated audio enhancing circuits that is used to enhance the standard acoustic quality value of common communication systems to enhance the acoustic quality value from said standard acoustic quality value hereof, thereby, improving apparatus's audio efficiency, audio quality and performance. Furthermore, for the conveyance of high quality acoustic signals, which may range out of the specified limit of specific acoustic or/and communication spectrum, lineal acoustic technique and acoustic apparatus employing analog/digital or digital/analog transmission may be employed, or exclusive analog FDM or digital TDM multiplexing technique may be employ for communicating at least one band of the high quality audio signals over at least one communication medium.

One can also notice that (,) (a) tunable selector means(,) coordinating an equilibrium control technique is employed for equivalent control, or an independent control technique may controversially be employed for independent control hereof. From this aspect, with (a) volume tuning control means(,) gives one the option to a user options which includes the ability of subjective control of audio signals in which the user has the choices of improving or/and varying select and boost an individual band of audio frequency signals herein (,). (It) The conjunction of a wireless communication apparatus with a motor vehicle's external reproductive audio system can easily be used enables subordinate monitoring while operating a motor vehicle. The method of combining multiple band-ranged audio signals is adopted for channeling a plurality of band audio signals to a conservative and efficient one-channel lineal procedure of said communication system hereof. The sound separation acoustic emphasis and the gratification of high grade, high class substantial materials, such as resistors, capacitors, inductors, transistor, diodes, etc. brings forth good audio quality and endurance to the audio section of the communicating apparatus. Generally, the submission of mathematical formulas to the acoustic circuits herein, provide specific regulating emphasis to variable acoustic values of the acoustic circuits for improving the acoustic section of the communication system, and the mathematical formulas is utilized to determine quality factors or other characteristic values which may include simple acoustic integral circuit for an inadequate or inaccurate envelope procedure or sophisticated circuits with complex waveforms and techniques for mimicking the matrix of audio signals in a precise manner which may include sufficient or all overtones decay and rise time information of this acoustically enhancement communicative system. The voluntary combination of a communicating communication apparatus, and a dispensable audio port and an external coupling medium(,) and with an external audio system(,) create a remote way of communicating audio signals to a user. A user can transmit(,) and receiving receive communication without occupying his or herself.

Furthermore advantages of the ~~crossover network~~ variable/invariable duplex /simplex mode audio enhancement section comprising the communication system, which may be comprised with comprising means for voluntarily coupling externally include that(.) :

- it ~~eliminate~~ eliminates the use of headphones or headsets that occupy a ~~users~~ user's hearing ~~cause~~ hazards and creates hazardous conditions;
- it ~~eliminate~~ is able to generate good quality, professional or advance quality audio signals that emulates from at least one verbal acoustic source or at least one general acoustic source and communicate the audio signals to the communication system in a manner in which the enhanced audio signals are technically apparent to a high degree distortion (.) and bring which thereby brings forth a clear audio accurate definition to transmission and reception with higher acoustic dimensions thereof;
- it bring brings forth (a) ~~new way to communicate~~ an advanced methods of communication due to the conjunction of ~~on~~ external system ultimate comprehensive acoustical enhancement communication techniques that is technologically consistent with a broad field of communication systems, which may include broadcasting systems;
- it ~~execute~~ executes communication in (a) an un-occupying non-occupying manner and ~~enable~~ enables a touch-free way to communicate;
- it ~~bypass~~ implement convenient lineal transmission radioactive waves that initialize from (a radio) communication apparatus ;
 - it can adjust audio signals frequencies to once satisfaction or once preference;
 - it ~~can enable~~ enables one to tune microphone input incoming signals and microphone output outgoing signals of a designated simplex or duplex communication system.
- It implements the use of stereo/mono phonic application that may consist of other acoustical improvable elements or circuits that generates realistic acoustic technology to a communication apparatus, such as a telephone, C.B radio, Two-way radio, Amateur radio, modem apparatus or other communication apparatus.
- It enables a user to control vary audio communicating communication signals internally or externally using an external audio system.

Reply to Non-Compliant Amendment of 11/8/04 and
Office action of 8/8/05

Amendments to the Specification:

Please replace this section of the specification page [69 to page 70] with the following amended section of the specification:

Audio-Cell Audio-Cell Acoustic Enhancement Communication

Abstract

[Page 69-70] A communication system **41, 77** communicating apparatus (,) having a crossover network comprising at least one audio enhancing circuit **(47)** employing at least one input port or input section which is capable of inputting original audio signals from at least one output port or output section of at least one acoustic source, such as a microphone. Furthermore, said at least one audio enhancing circuit is capable of enhancing said original audio signals to magnificently enhanced quality value that is at least in part of intelligible perimeter, in which is important for reasonable perception. Said magnificently enhanced quality value extends from the acoustic value of “telephone quality audio signals” thereto enhanced acoustic value. Thereby, said at least one audio enhancing circuit further employs at least one or two communicative channels which are able to channel the acoustic enhancement communication procedure in a simplex or duplex mode thereof and provides at least one band of audio frequency or/and acoustic value, at least three bands of audio frequencies or/and acoustic values that are able to band or value audio signals for the emphasis of audio tone herein, and control means are provided to the audio enhancing circuit for controlling said audio signals and to comprising (a) tunable selecting means (,) coordinating with a volume peaking means for giving provide a user with the option of subjective control to select and boost a preferred audio setting while communicating said audio signals, to a user (,) said crossover network is adapted for dividing and tuning at least three band (of audio) frequency signals while transmitting and receiving communication or said at least one audio enhancing circuit is able to provide fixed components herein, such as, fixed capacitors, fixed resistors, fixed inductors, et cetera for the implementation of fixed enhanced acoustic quality value thereof.

Furthermore, for the conveyance of infinite quality audio signals over a communication spectrum such as a voice frequency spectrum, multiplexing means and/or lineal-analog/digital or digital/analog method and apparatus are provided for communicating the audio signals over at least one communication medium. The crossover network Said at least one audio enhancing circuit wherein (a) is recited as at least one section of, may be integrated with or is an audio processing circuit, an audio preamplifier circuit, an audio equalizer circuit, an audio frequency divider circuit or other audio circuits hereof. The three bands of audio signals of said audio enhancing circuit are able capable of employing at least one band of high- high-range audio frequency signals (74), which may be specified at an approximate value that is capable of acoustic accentuation for which is important for intelligibility and the manipulation of clarity signal, (a) at least one band of midrange audio frequency signals (75), which may be of specified value that is important for audio quality, and (a) at least one band of low low-range audio frequency signals (76), which may be of specified value that is fundamental to audio signals herein. Thereby, each band of audio signals is (,) each is employed for driving (an) stressed to individual magnetic region implement magnificent perception therein. The adjacent receiving receiver section (85) may further comprise comprising a dispensable output section for voluntarily coupling externally to an independent audio system. Port (,) adopted for coupling to an external acoustic medium (,) the same having means for connecting to (an) external audio system in a (motor) vehicle (.)